

REMARKS

Part 12 of the Office Action Summary was not completed. That is, none of boxes 1, 2, and 3 was checked to indicate receipt of the priority documents. A box was checked to acknowledge the claim for priority, but the section indicating receipt of the priority document was not completed. The applicants respectfully request a notice that the certified copy of the priority document, which was filed on 13 April 2004, was received.

Claims 1-14 are pending. The applicants respectfully request reconsideration and allowance of this application in view of the above amendments and the following remarks.

Minor changes have been made to the claims for clarification and not in response to the rejection. For example, the term "crossover" has been changed to "crossover lead" to clarify that the crossover is an electrical lead wire as distinguished from the insulation tube. Also, in some claims, "insulating tube" has been changed to "insulating tube apparatus" because in some embodiments, the tube is made up of plural units. Since the word "tube" is generally singular, the term "tube apparatus" is more appropriate for an object that may be singular or may be made up of plural parts.

In addition, the phrase "formed on" in claim 11 has been changed to "formed in" for clarification and for appropriate word usage.

Further, claim 3 has been clarified to say that the thermal expansion coefficient absorption means comprises adjacent ends of the insulating tube units and a gap between the adjacent ends.

Claims 1-14 were rejected under 35 USC 103(a) as being unpatentable over Dulin *et al.* in view of the Japanese publication of Murakami *et al.* and Berger. The applicants respectfully request that this rejection be withdrawn for the following reasons.

As stated in the office action, the patent to Dulin *et al.* discloses a rotary transformer type resolver and a cross over 70. However, as also stated in the office action, the patent to Dulin *et al.* fails to disclose a disconnect protection structure.

The Japanese publication to Murakami *et al.* discloses a rotary transformer in which a tubes 4, through which leads 3 pass, are bonded at one end to a ferrite core 1 of the transformer. However, contrary to what is stated in the office action, Murakami *et al.* fails to disclose outermost ends of the tube being secured to the crossover lead. In addition, the tubes 4 are not parts of an insulation tube; rather, they are apparently independent, parallel insulation tubes. Also, the leads 3 and tubes 4 are not part of a crossover of a rotary transformer type resolver.

The patent to Berger discloses an electrical resolver. However, Berger fails to disclose a crossover lead wire or an insulation tube apparatus. Therefore, Berger does not relate to the claimed subject matter. Berger discussed thermal expansion only in the context of a mechanical hub.

As for claim 1, the office action asserts that the Murakami *et al.* publication shows a disconnection protection structure. However, the Murakami *et al.* reference fails to disclose "thermal expansion coefficient absorption means" that correspond to the structure disclosed in the specification of the present application, according to section 112, para. 6. The office action states that the Dulin patent fails to show a disconnection protection structure, and Berger doesn't even show a crossover lead. Therefore, the Murakami *et al.* publication is apparently being relied upon to show the "thermal expansion coefficient absorption means." However, the Murakami *et al.* publication merely discloses tubes 4 bonded at one end to the core 1. Only one end of each tube 4 is bonded in the Figures of Murakami *et al.* The tubes 4 are independent and are not parts of "an insulating tube" as claimed. That is, the bonded ends of the tubes 4 are not

"outermost ends." Further, there is no structure for absorbing thermal expansion as claimed. Therefore, the structure of Murakami *et al.* fails to correspond to any of the structures that are thermal expansion coefficient absorption means in the specification of this application.

Claim 1 further recites an insulating tube that covers the crossover lead and that has outermost ends secured to the crossover lead. The publication of Murakami *et al.* fails to disclose this feature. (An English abstract of the Murakami *et al.* reference is attached as an Appendix to this paper for the examiner's convenience.) While one end of each of the tubes 4 is bonded to the ferrite core 1, there is nothing to indicate that the ends of the tubes are bonded to the crossover lead, as claimed. In Figure 5, the epoxy 25 appears to contact the wire 23; however, there is nothing to confirm that the wire 23 is actually bonded to the tube 24. In any event, even if the wire 23 is bonded to the tube 24 in Fig. 5 of Murakami *et al.* the tubes 24 are not parts of a single insulating tube apparatus, as claimed. Therefore, a combination of the Dulin patent, the Murakami reference and Berger fails to satisfy the terms of claim 1, and the applicants respectfully request that this rejection be withdrawn.

Although the Berger reference is applied to claim 1, there is no discussion of Berger as it applies to claim 1. The applicants respectfully request that the examiner explain what contribution Berger makes to the rejection of claim 1 if this rejection is repeated.

Claims 2-6 depend on claim 1 and are thus patentably distinguished from the combination of the Dulin patent, the Murakami reference and Berger for the reasons given above with respect to claim 1.

Regarding claim 2, the office action states that Murakami *et al.* discloses an insulating tube separated into a plurality of insulating tube units. However, the tubes 4 of Fig. 1 of Murakami are independent and not part of a single insulating tube.

In discussing some of the dependent claims, the office action relies on col. 1, lines 40-45 of Berger to show thermal expansion coefficient absorption means. However, this part of Berger is describing mating surfaces of hubs and sleeves of resolvers. These are mechanical parts of the resolver and have nothing to do with a crossover lead or an insulating tube. Apparently, the examiner has misread this reference, since it has nothing to do with the claimed invention. Berger fails to disclose a crossover or insulating tube of a crossover.

Claim 7 requires an insulating tube for a crossover lead to be divided into a plurality of tube units. As mentioned above, the tubes 4 of Murakami *et al.* are not part of the same insulating tube but are independent and parallel. Also, none of the Dulin patent, the Murakami reference and Berger shows an insulating tube in which the outermost ends are secured to the crossover lead. Therefore, the terms of claim 7 and its dependents cannot be satisfied by a combination of the Dulin patent, the Murakami reference and Berger.

Claims 8-10 depend on claim 7 and are considered to be patentable over the combination of Dulin patent, the Murakami reference and Berger for the reasons given above with respect to their base claim.

Claim 11 requires a unitary insulating tube in which a cutout is formed. The office action cites Berger, col. 1, lines 40-45 for the feature of a cutout. However, Berger fails to disclose a crossover or an insulation tube. Berger is discussing the mechanical hub of a resolver in the cited text, which is not similar to, related to or analogous to an insulation tube of a crossover lead.

Also, in a manner similar to claims 1 and 7, claim 11 requires that outermost ends of the insulating tube be secured to the crossover lead. As discussed above, this feature is not shown or suggested in the cited references. Therefore, a combination of the Dulin patent, the Murakami reference and Berger cannot satisfy the terms of claim 11 and its dependents.

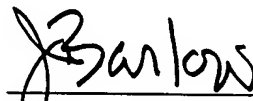
Claims 12-14 are dependent on claim 11 and are therefore considered to be patentable over the combination of the Dulin patent, the Murakami reference and Berger based on dependency.

Claims 14 and 15 are new. Claims 14 and 15 depend from claims 11 and claim 2, respectively, which are discussed above. Therefore, claims 14 and 15 are considered to be patentable based on dependency. In addition, these claims recite an end-to-end relationship of the tube units, which is not disclosed or suggested in the cited references.

In view of the foregoing, the applicants respectfully submit that this application is in condition for allowance. A timely notice to that effect is respectfully requested. If questions relating to patentability remain, the examiner is invited to contact the undersigned by telephone.

Please charge any unforeseen fees that may be due to Deposit Account No. 01-0305.

Respectfully submitted,



James E. Barlow
Reg. No. 32,377

Adduci, Mastriani & Schaumburg, L.L.P.
1200 Seventeenth St. N.W.
Washington, DC 20036

PATENT ABSTRACTS OF JAPAN

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(71)Applicant : HITACHI FERRITE LTD

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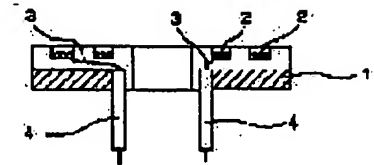
(72)Inventor : MURAKAMI TOYOHICO
IKEMOTO OSAMU

(54) ROTARY TRANSFORMER

(57)Abstract:

PURPOSE: To provide a rotary transformer which keeps bonding strength between tube wherethrough a lead passes and a disc-like ferrite core and of which number if processes can be reduced.

CONSTITUTION: A coil 2 is inserted and bonded to a groove for coil arrangement of a disc-like ferrite core 1, and a lead 3 of the coil 2 is inserted to a tube 4. The tube 4 is bonded to the core 1. Ultraviolet-setting epoxy adhesive is used. Thereby, it is possible to set it in a short time, to incorporate a tube fixing process in a line, to realize substantial reduction of the number of processes and to acquire enough strength.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]